

REMARKS

The Examiner is thanked for the thorough examination of the present application and the withdrawal of the previous rejections. The Office Action, however, rejected all examined claims on new grounds. In response, Applicant submits the foregoing amendments and the following remarks. Specifically, claims 1, 8 and 15 have been amended to more clearly define over the cited art. No new matter has been added to the application by these amendments. Applicant submits that these amendments render the various rejections moot. Notwithstanding, Applicant submits the following additional distinguishing remarks.

Rejections under 35 U.S.C 103(a)

Claims 1, 3, 6, 8, 10, 13, 15, 17, and 20 stand rejected under 35 U.S.C 103(a) as allegedly being unpatentable over Butt et al. (U.S. Pat. No. 5,889,944) in view of Yamagashi (U.S. Pat. No. 5,870,604), Aref et al. (U.S. Pat. No. 6,023,720), and Bigus (U.S. Pat. No. 5,442,730). Applicant respectfully requests reconsideration and withdrawal of these rejections.

In regard to independent claims 1, 8, and 15, Butt, Yamagashi, Aref and Bigus do not teach or suggest the combination of features define by these amended claims. Specifically, each of Butt, Yamagashi, Aref and Bigus fails to disclose, suggest, or teach, *inter alia*, the following feature, which is expressly recited in each of these claims:

“fetching resource status data of at least one resource item of the application system, wherein the resource item comprises a central processing unit (CPU) and a disk of the application system, and *the resource status data comprises data for the CPU use rate and data for the disk use rate*”; and

“determining an execution time point for at least one process according to the resource status data using a neural network model, ***wherein the CPU use rate, the disk use rate and a peak time interval are adopted as processing elements of the neural network model***, and the resource status data is fed to the neural network model for calculating the execution time point for the process”.

(*Emphasis added*).

In the present application, ***the resource item comprises a central processing unit and a disk of the application system, and the resource status data comprises data for the CPU use rate and data for the disk use rate***. The Office Action asserts that the meaning of “disk use rate” in the present application is contrary to the commonly understood meaning of the word “rate”, *i.e.*, a magnitude or frequency relative to a time unit. Applicant respectfully disagrees. In this regard, it is understood that **“disk use rate” means the occupation situation of the disc. The occupation situation of the disc refers to a ratio relative to the total size of the disc, and not a time unit**. Applicant submits that persons skilled in the art will understand the meaning of “disc use rate” consistent with the foregoing.

In contrast, col. 5, lines 26-35 of the Aref reference states:

“This solution has been found to have several drawbacks. First, *batching a large number of writes to increase the disk bandwidth utilization* (by reducing seek time) may lead to either an increased likelihood of the system violating the deadline of newly arrived read requests or starvation of the write requests. Also, *interrupting the SCAN order of currently existing reads to schedule writes may increase the average seek time and lower disk utilization*. This increases the overall delay of read requests at the server, leading to a reduction in QOS, as observed by the application.”

Thus, Aref only relevantly introduces batching a large number of writes will increase the disk bandwidth utilization, and interrupting the SCAN order of currently existing reads to schedule writes may lower disk utilization. Note that, Aref introduces the basic concept

and results on the disk and bandwidth thereof when applying reads/writes to a disc. Again, the objective of the Aref reference is to support simultaneous read and write requests in the presence of real-time requirements and high bandwidth demands. Various embodiments of the present invention dynamically calculate an execution time point for a process according to the resource status of the resource item, which is patentably distinguished from the Aref reference. Nowhere in the Aref reference does it disclose that the disk situation (disk use rate) can be used to schedule a process, as embodied in the claims.

Additionally, the Aref reference is applied in a real-time system. The key point of the claimed embodiments is focused on “optimize the scheduling under the general limited factors”. In the claimed embodiments, the calculation for the execution time point of a process is based on the CPU use rate, the disk use rate and a peak time interval. The peak time interval is a busy period of the application system. The Examiner didn’t provide proper support for the rejection reasoning and response regarding the peak time interval. Nowhere in the Butt, Yamagashi, Aref or Bigus references do any of these references disclose that the job to be executed considering the peak time interval of the system. Consequently, even if the references could be properly combined, the resulting combination still fails to teach all claimed features of the independent claims. For at least this reason, the rejections of independent claims 1, 8, and 15 should be withdrawn.

In addition, ***Bigus only relevantly discloses a neural network is used for job scheduling.*** Nothing further, relevant to the claimed embodiments, is discussed in Bigus. In the claimed embodiments, however, the calculation for execution time point using the neural network model is well defined, wherein the CPU use rate, the disk use rate and a peak time interval of the system of the present application are adopted as processing

elements of the neural network model, and the resource status data is fed to the neural network model for calculating the execution time point for the process. ***Nowhere does Bigus disclose or teach the resource status data (CPU use rate and the disk use rate) and the peak time interval of the application system can be integrated to the neural network for job scheduling.***

Again, even if Butt, Yamagashi, Aref, and Bigus could be properly combined, the resulting combination still fails to disclose all features of the embodiments of claims 1, 8, and 15. Therefore, the rejections of claims 1, 8, and 15 should be withdrawn. Insofar as all remaining claims depend from claim 1, claim 8, or claim 15, all claim rejections should be withdrawn. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

A credit card authorization is provided herewith to cover the fees associated with the accompanying RCE application. No additional fee is believed to be due in connection with this submission. If, however, any additional fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

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